

Response Under 37 C.F.R. § 1.111
U.S. Application No.: 09/963,418

Examiner, however, has not provided any explanation as to why this reference was not considered.

Applicant respectfully submits that the Information Disclosure Statement was filed in accordance with 37 C.F.R. §§1.97 and 1.98 and, therefore, each reference should be considered by the Examiner. For the Examiner's convenience, Applicant submits herewith a clean copy of Form PTO-1449 listing only the reference that was not previously considered along with a copy of the reference (i.e., IEEE Transactions on Magnetics, Vol. 36, No. 4, July 2000, pages 1854-1857).

In view of the foregoing, Applicant kindly requests that the Examiner initial next to the reference listed on Form PTO-1449 and submit the signed and initialed form with the next Office paper. If the Examiner does not consider the reference, Applicant respectfully requests an explanation from the Examiner as to why the reference is not being considered.

II. Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sakamoto (U.S. Patent No. 5,532,531) in view of Hoffman (U.S. Patent No. 3,671,841) and Bustamante et al. (U.S. Patent No. 6,198,182). Applicant respectfully traverses this rejection on the following basis.

Claim 1 sets forth that the number of teeth for an output shaft gear is set to a predetermined ratio with respect to the number of magnetically stable points per rotation of a rotor in order to hold a member to be driven in a reference position when a coil is electrified by a

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regulated electrification pattern. Applicant submits that at least this feature of claim 1 is neither taught nor suggested by the cited prior art.

The Examiner recognizes that Sakamoto does not teach or suggest the above mentioned feature of claim 1. In an attempt to cure this deficiency, the Examiner applies Hoffman and asserts that Hoffman teaches such a feature. Applicant respectfully disagrees.

Hoffman discloses a stepper motor which utilizes an output shaft gear (75)(see Fig. 2). Contrary to the assertion of the Examiner, however, Hoffman is completely silent regarding the number of teeth on the output shaft gear (75) and, therefore, it is clear that Hoffman does not teach a specific relationship between the number of teeth on the output shaft gear and the number of magnetically stable points per rotation of the rotor such that a member to be driven is held in a reference position when a coil is electrified by a regulated electrification pattern, as is required by claim 1. Further, both Sakamoto and Bustamante fail to cure this deficiency of Hoffman.

Moreover, Applicant submits that the above discussed feature is not an intended use of the claimed invention which can simply be ignored by the Examiner. Rather, this feature structurally defines the number of teeth present on the output shaft gear and, therefore, must be afforded patentable weight. Thus, a mere showing of an output shaft gear (75) in Hoffman plainly does not teach the specific relationship between the number of teeth on the output shaft gear and the number of magnetically stable points per rotation of the rotor, as is recited in claim 1. Indeed, Hoffman does not even remotely suggest such a feature.

Further, Applicant notes that functional limitations in claims must be given their appropriate patentable weight. There is nothing inherently wrong with defining some part of an

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invention in functional terms. “A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used.” *See In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997). MPEP §2173.05(g) (Emphasis added).

Based on the foregoing, Applicant respectfully submits that the combination of Sakamoto, Hoffman and Bustamante fails to teach or suggest all of the features of claim 1. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection.

If the Examiner persists in this rejection, Applicant respectfully requests that the Examiner particularly point out the structure and passages in Hoffman which the Examiner is relying on as teaching the above discussed claim feature so that Applicant may make an informed decision with regard to appeal.

Claims 2-6 depend from claim 1 and therefore incorporate all of the limitations thereof. Accordingly, Applicant submits that claims 2-6 are patentable at least by virtue of their dependency.

In addition, claim 2 sets forth an equation which is used to obtain the number of magnetically stable points per rotation of the rotor. The Examiner again asserts that the equation in claim 2 is merely a manipulation of numbers (i.e., converting one set of numbers into another set of numbers) and, therefore, does not constitute statutory subject matter. Applicant respectfully disagrees.

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In response to the non-final Office Action dated April 9, 2003, Applicant argued that such features were not a mere manipulation of numbers. The Examiner, however, did not respond to Applicant's argument.

In accordance with MPEP 707.07(f), "where applicant traverses any rejection, the examiner, should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it." Thus, as the Examiner did not answer Applicant's argument in the present Office Action, Applicant respectfully requests that the Examiner answer the substance of Applicant's argument in the next Office paper.

Specifically, in the previous response, Applicant pointed out the equation set forth in claim 2 is not simply a manipulation of numbers which converts one set of numbers into another set of numbers. Rather, claim 2 sets forth an equation which generates the number of magnetically stable points per rotation by utilizing the number of claws of a stator core iron, the number of poles of the stator core iron and the number of phases of the stator core iron.

Clearly, such an equation cannot be viewed simply as a conversion between one set of numbers a another set of numbers, as suggested by the Examiner. Rather, the equation produces a useful, concrete, and tangible result (i.e., the number of magnetically stable points per rotation by one electrification pattern) and, therefore, constitutes patentable subject matter. See MPEP § 2106 (IV)(B)(2)(b)(ii). Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection.

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If the Examiner maintains the position that calculating the number of magnetically stable points per rotation by one electrification pattern is a mere manipulation of numbers, Applicant requests that the Examiner provide support for such a rationale.

Claim 3 recites that the number of teeth for the output shaft gear is set to be equal to the number of magnetically stable points per rotation of the rotor. The Examiner recognizes that neither Sakamoto nor Bustamante teach such a feature but asserts that Hoffman discloses this feature. Similar to the discussion above, Applicant respectfully submits that Hoffman merely discloses the use of a output shaft gear (75) but in no way teaches that the number of teeth on output shaft gear (75) is equal to the number of magnetically stable points per rotation of the rotor. Indeed, as discussed above, Hoffman does not even suggest such a feature.

Based on the foregoing, Applicant kindly requests that the Examiner reconsider and withdraw the rejection.

III. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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